

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 117888

May-05-14 11:47:08 AM

117888

Page 2

Item ID: 646.9701 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Cutter Sub Assembly
 Start Date: 5/05/14 Start Qty: 3.00 ***3*** Cust Item ID:
 Required Date: 5/05/14 Req'd Qty: 3.00 ***3*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140	Identify as per dwg & Stock Location: _____	0.00							DAS
140									32
Packaging	Memo	0.00							9-89
Packaging	***IDENTIFY AS PER IAW MPP-120***								
150	QC21- Final Inspection - Work Order Release	0.00							
150									
QC	Memo	0.00							
Quality Control									

14/9/23 3
 MLS 14-09-23
 4-9-23

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Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Picklist Print

May-05-14 11:47:07 AM

Page 1

Work Order ID: 117888

117888

Parent Item: 646.9701

646.9701

Parent Item Name: Cutter Sub Assembly

Start Date: 5/05/14

Required Date: 5/05/14

Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A 12.08.13 NEW ISSUE DD VERF:JFS

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
646.9710		Manufactured	No			110	Each	100.0000	1	3		DAS 41	
646.9710									**			9-89 14-9-21	

Body

Location	Loc Qty	Loc Code
CA	100	
104943	18	
106354	5	
110623	4	
112238	5	
113268	5	
91439	3	
94495	4	
98917	11	
98918	45	

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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Doc/Data <input type="checkbox"/>									
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Handling/Pre <input type="checkbox"/>									
Material <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Offset/Setup <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Transport <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____ _____
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Picklist Print

May-05-14 11:47:08 AM

Page 2

Work Order ID: 117888

117888

Parent Item: 646.9701

646 9701

Parent Item Name: Cutter Sub Assembly

Start Date: 5/05/14

Required Date: 5/05/14

Start Qty: 3.00

Required Qty: 3.00

646.9711

Manufactured No

110

Each

418.0000

2

6

DAS

41

9-89

14-9-21

646 9711

Blade

Location

Loc Qty

Loc Code

CA

418

100268

92

102756

20

104205

50

104935

24

105988

8

106350

16

108731

31

109392

21

110041

60

110622

20

112223

20

115250

8

90824

1

98911

47

MS21042L08

Purchased

No

110

Each

5,810.000

6

18

DAS

41

9-89

14-9-21

MS21042L 08

Nut

Location

Loc Qty

Loc Code

ST314

3558

123900

58

m128401

1500

m128429

2000

ST508

2153

125445

755

m127410

1398

ST509

99

m127304

99

May-05-14 11:47:08 AM

Shop Packet Print

Page 2

DQA: _____ Date: _____



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Doc/Data									
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Material									
Operator									
Offset/Setup									
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Training									
Transport									
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FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
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Picklist Print

May-05-14 11:47:08 AM

Page 3

Work Order ID: 117888

117888

Parent Item: 646.9701

646.9701

Parent Item Name: Cutter Sub Assembly

Start Date: 5/05/14

Required Date: 5/05/14

Start Qty: 3.00

Required Qty: 3.00

MS27039-08-19

Purchased

No

110

Each

2,256.000

6

18

DAS

MS27039-08-19

41
9-89

14-9-21

Screw

Location

Loc Qty

Loc Code

ST506

2256

124309

854

125654

127

m127410

275

m127904

1000

18

NAS1149FN832P

Purchased

No

110

Each

9,830.000

12

36

DAS

NAS1149FN832P

41
9-89

14-9-21

Washer

Location

Loc Qty

Loc Code

ST295

470

123185

30

123522

400

123900

40

st510

9360

125268

9360

36

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Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence
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APICAL

INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 04039

SHEET 1 OF 1

DWG NO. 646.9700

REV: B

PREPARED
BY

D. PETERS

DATE: 08/09/13

EFFECT ON DWG
☒ INC. ☐ UNINC.

DWG TITLE: CUTTER SUB ASSY

APPROVED BY:

ENGR

MFG

QC

EFF:

NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: MARKED INSPECTION DIMENSIONS

ECR:

NONE

117888 MJS
140507

DOCUMENTS EFFECTED:

☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

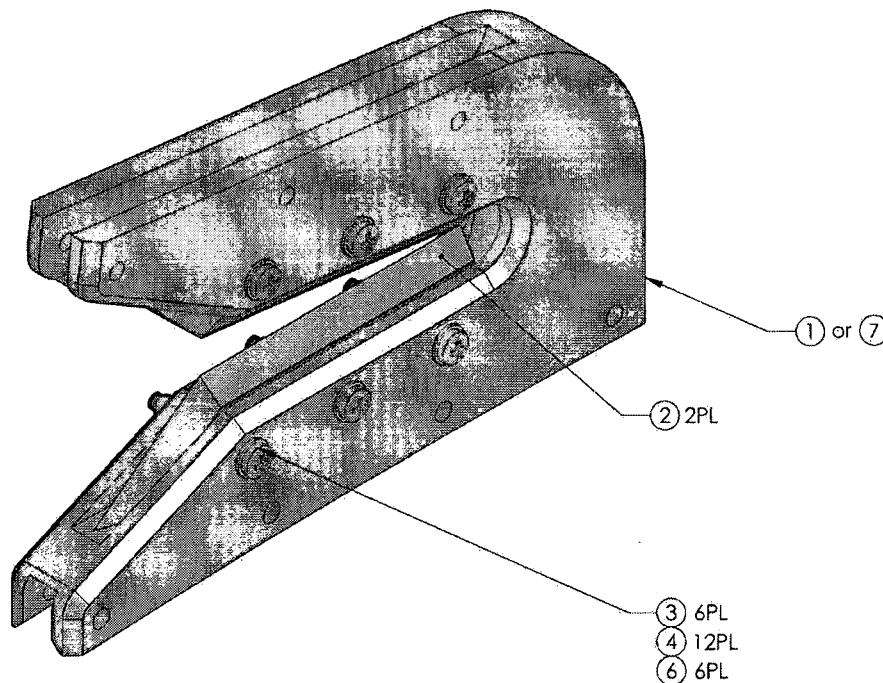
DER REVIEW REQUIRED
☐ YES ☒ NO

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REVISION			
REV.	DESCRIPTION	DATE	APPROVED
1	LAST PROTOTYPE REVISION: R99		N/C
N/C	INITIAL RELEASE	02/09/09	P. BRAVO
A	INCORPORATED FOR DESIG. R0208, R0217	04/06/13	T. BRAVO
B	INCORPORATED FOR DESIG. R0217	07/23/13	P. BRAVO
C	INCORPORATED FOR DESIG. R0217	08/09/13	P. BRAVO

NOTES:

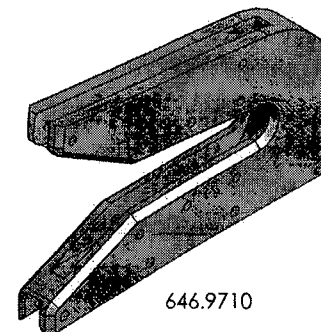
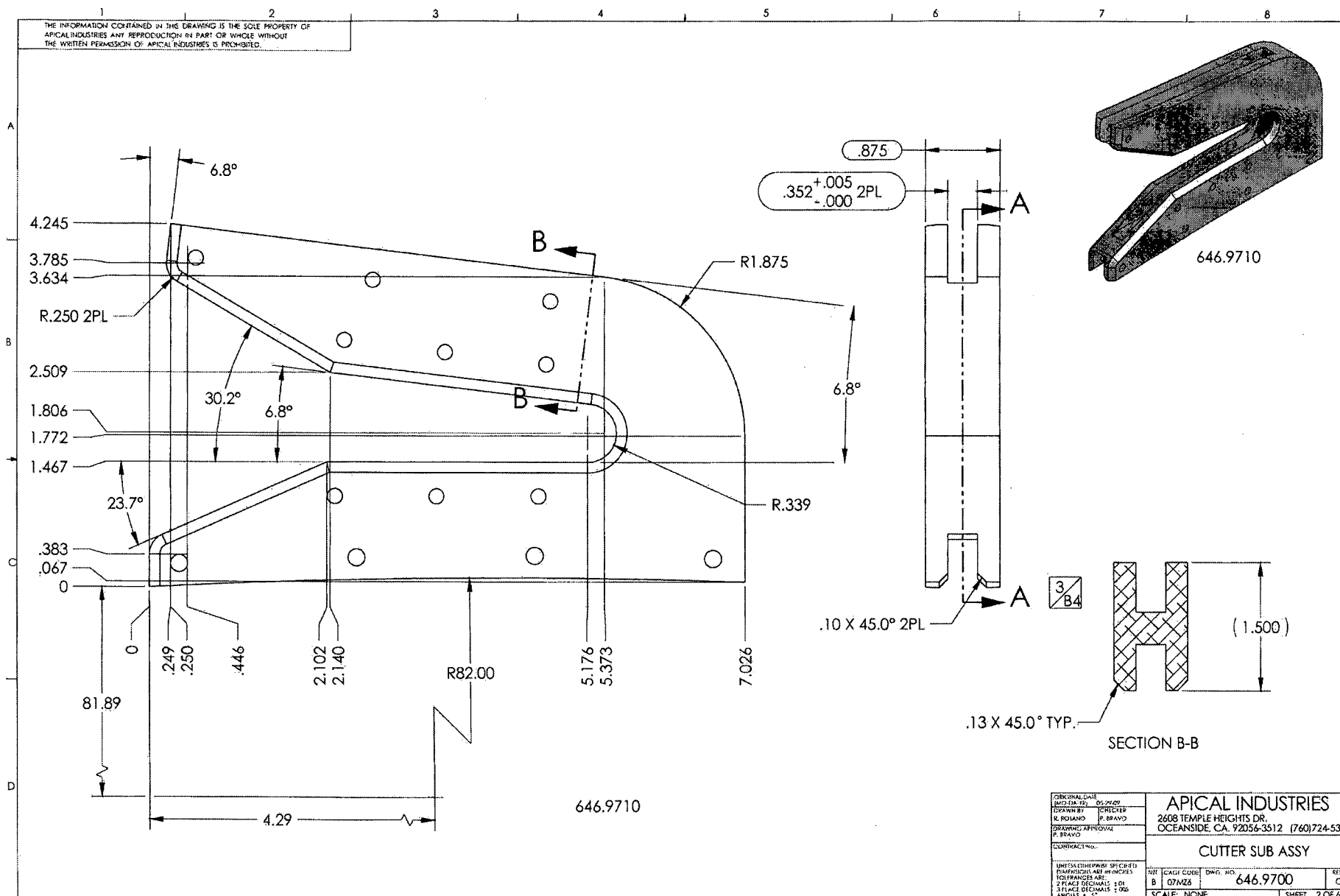
- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
PRETREAT PRC-DESOTO PR-148 ADHESION PROMOTER;
PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 Rc ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N; 1-2 MIL MAX
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP, DO NOT BREAK SHARP EDGE
- 9 ALL DIMENSIONS NOT SPECIFIED ARE CONTROLLED BY 646.9710.



646.9701
or
646.9702

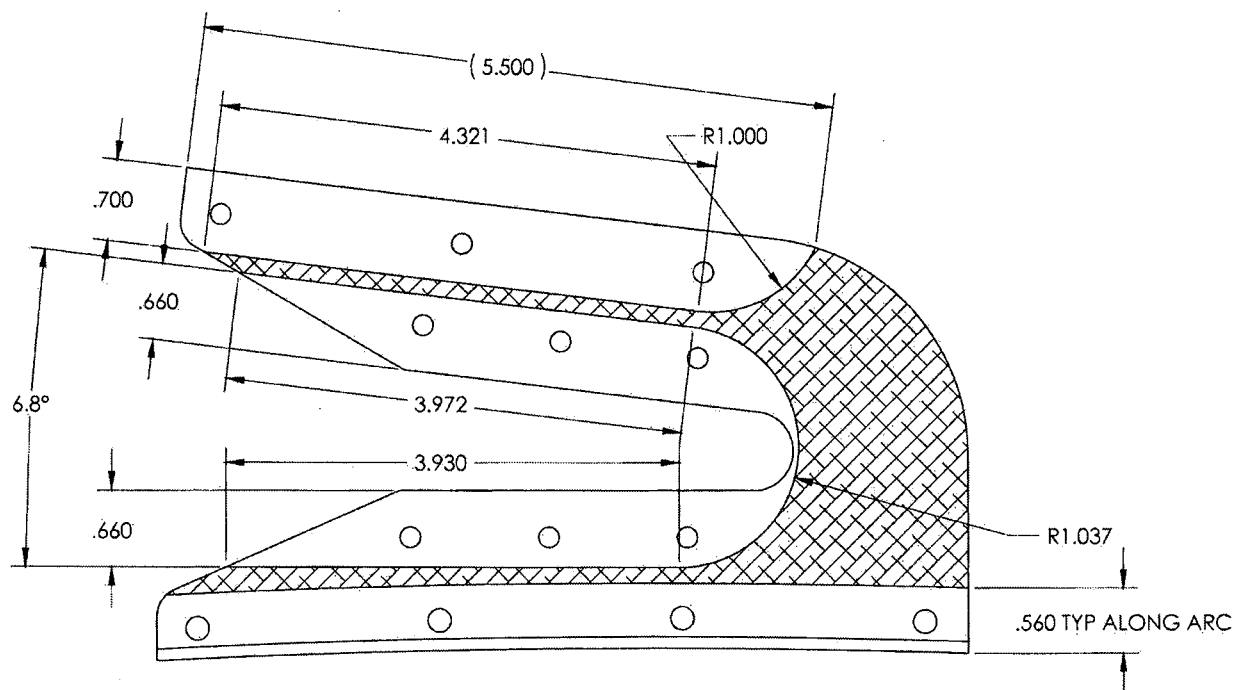
1	7	646.9712	BODY (U CHANNEL)	1	1
6	6	601.1541	LOCKNUT	MS21042-08	
A/R	A/R	5	RTV, LOCTITE 598		
12	12	4	601.2764	WASHER	MS1147H0259
6	6	3	601.2765	SCREW	MS27039-0819
2	2	2	646.9711	BLADE	1
	1	1	646.9710	BODY	1
			646.9702	CUTTER SUB ASSY (U CHANNEL)	
			646.9701	CUTTER SUB ASSY	
9702	9701	FIND #	PART #	DESCRIPTION	MAT'L SPEC.
PARTS LIST					
QTY			APICAL INDUSTRIES		
NEXT ASSY (S)			2608 TEMPLE HEIGHTS DR.		
646.9600			OCEANSIDE, CA. 92056-3512 (760)724-5300		
			CUTTER SUB ASSY		
			UNLESS OTHERWISE SPECIFIED		
			DIMENSIONS ARE IN INCHES		
			FRACTIONS ARE		
			2 PLACE DECIMALS 1/16"		
			3 PLACE DECIMALS 1/32"		
			ANGLES ± .5°		
			SCALE: NONE		
			SHEET 1 OF 6		

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ORIGINAL DATE (MO-DA-YR) 05-29-09		APICAL INDUSTRIES	
DRAWN BY R. ROLAND		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY P. BRAVO		CUTTER SUB ASSY	
DRAWING APPROVAL P. BRAVO			
CLINICAL NO.			
UNITS: DIMENSIONS SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS: ±.01 3 PLACE DECIMALS: ±.005 ANGLES ±.5°		REV. C	REV. C
DATE	CAGE CODE	DWG. NO.	SHEET
B	07M26	646.9700	2 OF 6
SCALE: NONE			

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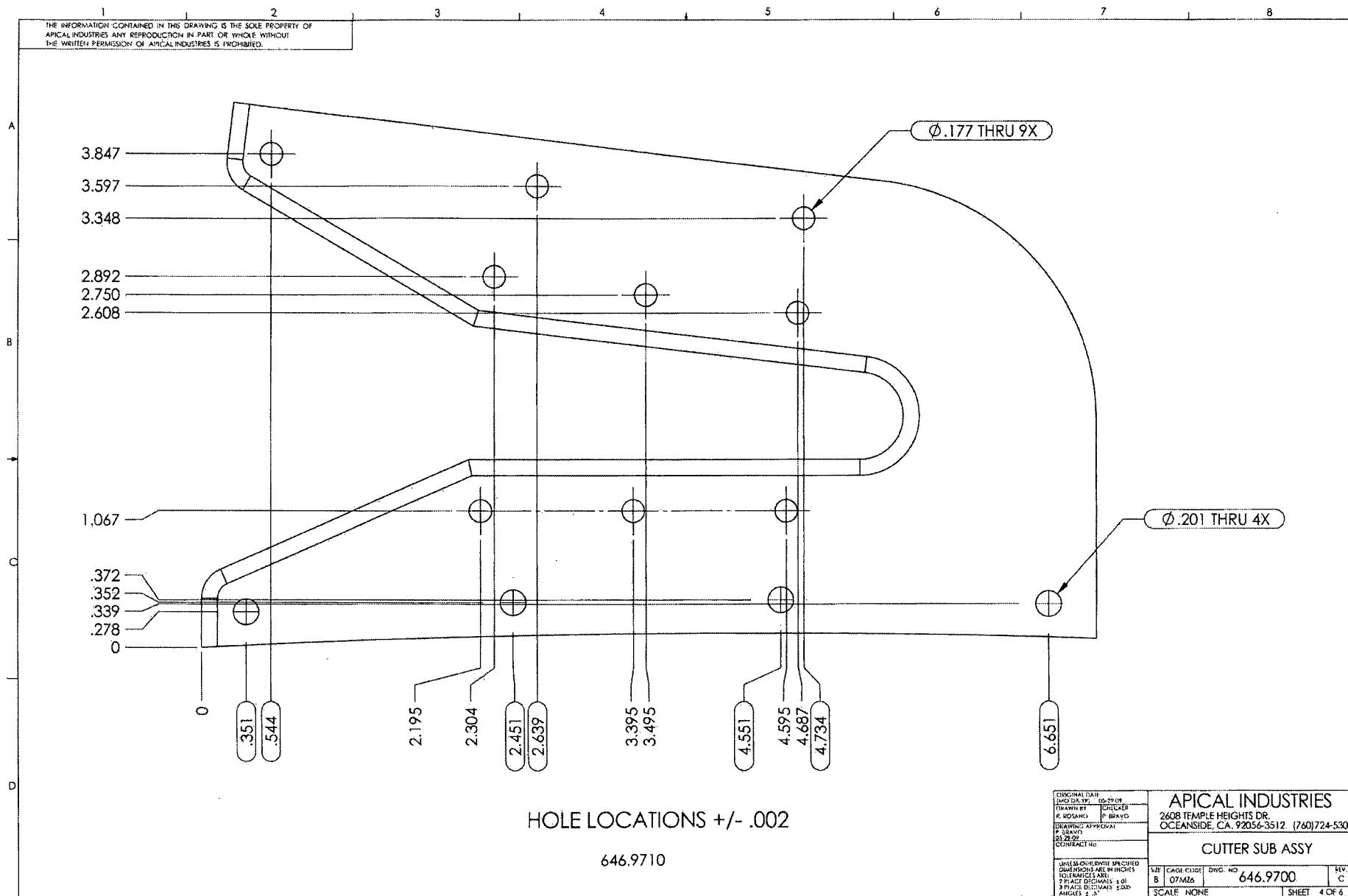


SECTION A-A $\frac{2}{C6}$

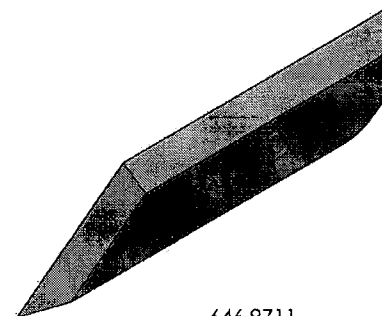
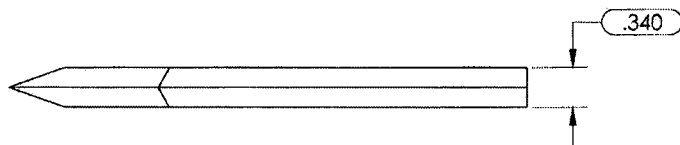
646.9710

ORIGINAL DATE DWG DA-101 03-22-84		APICAL INDUSTRIES	
DRAWN BY P. BOHANNON P. BRAVO		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL P. BOHANNON P. BRAVO		CUTTER SUB ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET B	REV. C
		CAGE CODE 07M26	SCALE NONE
		OWG. NO. 646.9700	SHEET 3 OF 6

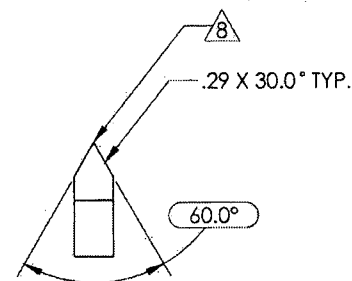
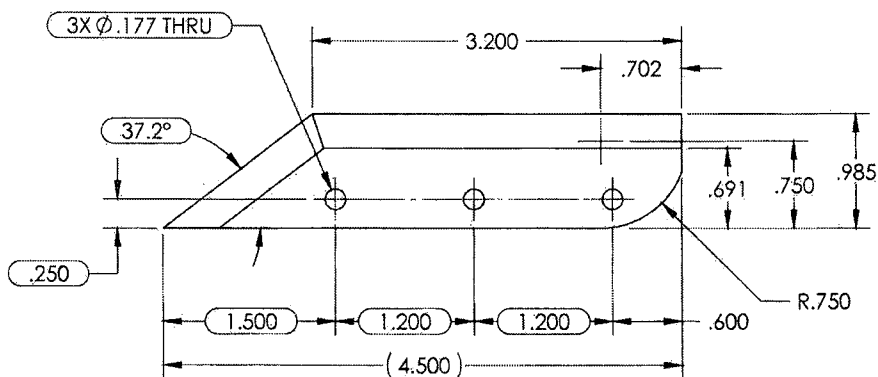
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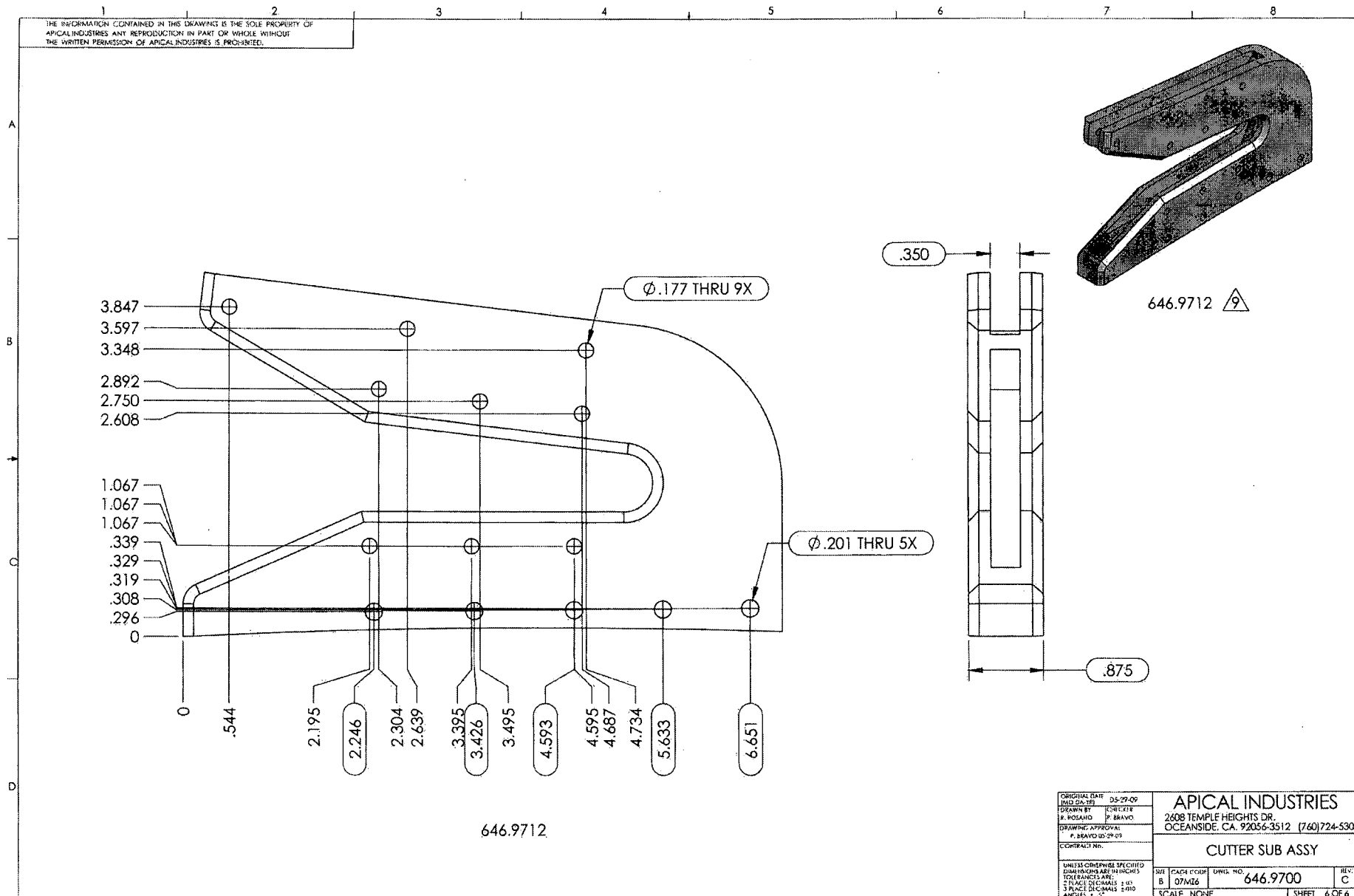
646.9711



646.9711

ORIGINAL DATE JMD-DA-151 05-29-66		APICAL INDUSTRIES	
DRAWN BY: J. KOSANO		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: P. BRAVO		OCEANSIDE, CA. 92056-3512 (760) 724-5300	
DRAWING APPROVAL: P. BRAVO		CUTTER SUB ASSY	
DATE: 05-29-66		SCALE: NONE	
CONTRACT NO.		SHEET 5 OF 6	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ± .01 3 PLACE DECIMALS ± .005 ANGLES ± .5°		REV. C	

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ORIGINAL DATE (MAY 20-78)		05-29-09	
DRAWN BY P. BRAVO		CHECKED BY P. BRAVO	
DRAWING APPROVAL P. BRAVO 05/29/09		<h1>APICAL INDUSTRIES</h1> <p>2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300</p>	
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS .001 ANGLES 2.5°			
SHEET B	CAGE CODE 07M26	UNCL. NO. 646.9700	REV. C
SCALE: NONE		SHEET 6 OF 6	

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760) 724-5300

CUTTER SUB ASSY